Proposed Cleanup Plan
for the Bozeman Solvent Site

Montana Department of
ENVIRONMENTAL QUALITY
Hazardous Waste Site Cleanup Bureau

March 2011

What is the Proposed Plan?

The Proposed Plan is an in-depth look at completing cleanup activities at the Bozeman Solvent Site Facility (BSS), which is a Comprehensive Environmental Cleanup and Responsibility Act (CECRA – State Superfund) facility in Gallatin County, Montana. The Montana Department of Environmental Quality (DEQ) has determined there has been a release of tetrachloroethene (PCE) and other hazardous or deleterious substances into the environment that presents an imminent and substantial endangerment to the public health, safety or welfare or the environment from the BSS.

The Proposed Plan identifies and explains DEQ's preferred alternative for addressing this imminent and substantial endangerment. This document also summarizes the cleanup alternatives evaluated for the BSS. The Proposed Plan is issued by DEQ, the lead agency overseeing the cleanup of the BSS. DEQ will select the final cleanup for the BSS and document it in a Record of Decision (ROD) after reviewing and considering all the comments submitted during the 30-day public comment period on this Proposed Plan. DEQ may modify the preferred alternative or select another alternative if it is demonstrated to be more appropriate or effective.

Concurrently with this Proposed Plan, DEQ is seeking public comment on the Final Draft Feasibility Study (FS). DEQ is issuing its Proposed Plan as part of its public participation responsibilities under Section 75-10-713, Montana Code Annotated (MCA). The Proposed Plan summarizes information found in greater detail in the Remedial Investigation (RI), the FS, and other documents contained in the files for the BSS.

Where can you find the documents?

Montana Department of Environmental Quality
1100 N. Last Chance Gulch
Helena, MT 59601
406-841-5000

Business Hours: Monday - Friday: 8:00 am – 5:00 pm

Bozeman City Library
626 E. Main St.
Bozeman, MT 59715
406-582-2406

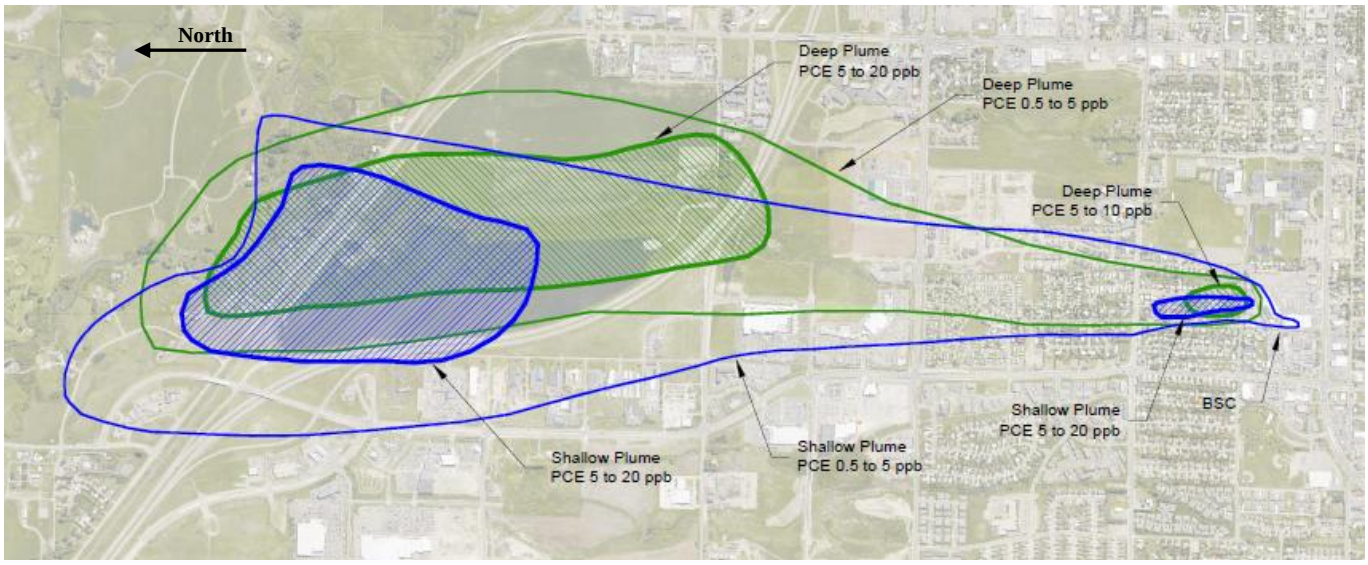
Business Hours: Monday – Thursday: 10:00 am – 8:00 pm
Friday – Saturday: 10:00 am – 5:00 pm
Sunday: 1:00 am – 5:00 pm

DEQ's website: http://deq.mt.gov/statesuperfund/bozeman_solvent.mcpx.

Background

The BSS is located in Bozeman, Montana. The majority of the BSS is within the City of Bozeman (City) limits, and includes residential areas, commercial facilities, and some light industrial facilities. The former Buttrey's Shopping Center (BSC) consists of a single story building with 12 individual retail spaces, including CVS Pharmacy and Hastings Book Store. The BSC is currently connected to the City's sanitary sewer system.

In 1989, DEQ conducted a survey of public water supply wells in Montana. During this survey, PCE was detected in a public water supply well at the Nelson Mobile Home Park approximately 2,000 feet north of the BSC. The PCE was ultimately traced back to the BSC, which at that time was connected to a private sewer system. The BSC sewer system consisted of a sewer line, service connections to the various attached businesses, a septic tank, and two seepage pits. A dry cleaner business operated at the BSC from 1960 until 1993 and discharged PCE into the former sewer line. The PCE was released into the subsurface at the BSC through leaks in the former sewer line and former septic system, and contaminated the soil and groundwater. There are no known contaminated surface soils. Soil contamination is primarily limited to the saturated soils beneath and adjacent to the former sewer line and the former septic system at the BSC. Groundwater contamination is between 11 and 52 ft deep. Groundwater contamination extends from the BSC to the north side of the East Gallatin River, approximately 2.5 miles away.



Risk Assessment

The City, CVS, and DEQ prepared the baseline human health risk assessment (BHHRA) for the BSS and the document was finalized as a DEQ document in 2010. The BHRRA assesses the current and potential future risk to human health that may be associated with exposure to contaminated subsurface soil, soil vapor, surface water, and groundwater under specific conditions that are consistent with current and expected future land uses. This process identifies the chemicals of concern (COCs), exposure pathways, exposure assumptions, toxicity values, and calculates site-specific cleanup levels (SSCLs) for COCs. DEQ compared the COC concentrations at the BSS with the SSCLs and Montana Numeric Water Quality Standards (DEQ-7 standards). Based upon this evaluation, DEQ determined that the COC concentrations in subsurface soil, soil vapor, and groundwater at the BSS represent unacceptable risks to human health and the environment, and that remediation is necessary.

Evaluating the Cleanup Options

Fourteen alternatives were evaluated and compared against the seven remedy cleanup criteria provided in Section 75-10-721, MCA. A list of the alternatives, a brief description, and their corresponding numbers is below.

- Alternative 1 - No Action
- Alternative 2 - In Situ Enhanced Biodegradation - Enhance the naturally occurring organisms present in soil and groundwater to breakdown contamination at the on-site residual source.
- Alternative 3 - In Situ Chemical Oxidation - Inject a chemical oxidant into the groundwater to destroy contamination in the soil and groundwater at the on-site residual source.

- Alternative 4 - Air Sparging - Inject air into the groundwater to volatilize contaminants at the on-site residual source, then extract and treat the contaminant vapor.
- Alternative 5 - Hydraulic Control/Containment - Extract and treat contaminated groundwater at the on-site residual source; then re-inject treated groundwater back into the ground.
- Alternative 6 - Passive Soil Venting - Use natural pressure gradients to remove contaminated sub-slab soil vapor from beneath the BSC building and discharge untreated vapors to the atmosphere.
- Alternative 7 – Soil Vapor Extraction - Extract contaminated sub-slab soil vapors from beneath the BSC building using a vacuum and discharge treated vapors to the atmosphere.
- Alternative 8 - New or Deeper Replacement Drinking Water Wells - Replace contaminated drinking water wells north of the East Gallatin River with new or deeper wells.
- Alternative 9 - Point-of-Use (POU) Treatment Systems - Use POU treatment systems to remove contamination from existing drinking water wells north of the East Gallatin River.
- Alternative 10 - Connection to City Water - Install City water services north of the East Gallatin River to replace contaminated drinking water wells.
- Alternative 11 - Community Water System - Install a Community Water System north of the East Gallatin River to replace contaminated drinking water wells.
- Alternative 12 - Plume Migration Control Pump and Treat - Extract and treat contaminated groundwater south of the East Gallatin River then re-inject treated groundwater back into the ground to reduce the contaminated groundwater north of the East Gallatin River.
- Alternative 13 - Plume Remediation Pump and Treat - A more aggressive (more extraction wells) Alternative 12.
- Alternative 14 - Monitored Natural Attenuation (MNA) - Use natural processes, along with source removal, to reduce contaminant concentrations in off-site groundwater over time.

The Preferred Cleanup

DEQ evaluated the different options and selected a combination of options to cleanup soil, soil vapor, and groundwater, and provide alternate drinking water. DEQ's preferred cleanup for the BSS is a combination of Alternative 2 (enhanced bioremediation) to address the on-site residual source; Alternative 7 (SVE) to address soil vapors, including on-site sub-slab; Alternative 8 (new or deeper replacement drinking water wells) to provide alternate drinking water on the north side of the East Gallatin River; and Alternative 14 (MNA) to reduce COC concentrations in the off-site dissolved groundwater plume. The existing CGWA, connection of impacted properties south of the East Gallatin River to City water services, and long-term monitoring will continue. In addition, a trench construction permit system to require a provision of fresh air ventilation or other health and safety measures for construction trenches at the BSC and properties immediately north of the BSC would be implemented to provide protection of utility and construction workers. The preferred remedy may be revised in response to public comment or new information. DEQ's final cleanup decision will be documented in the BSS ROD.

Based on the information available at this time, the preferred cleanup is protective of public health, safety, and welfare and the environment, would comply with environmental requirements, criteria and limitations (ERCLs), would mitigate risk, would be effective in the short- and long-term, is practicable and implementable, uses some treatment and resource recovery technologies, and is cost-effective. Because it would treat the source materials, the remedy also would meet the statutory preference for the selection of a remedy that involves treatment as a principle element.

Public Involvement

Public involvement is an important part of the Superfund process and DEQ encourages public comment on the FS and this Proposed Plan. The public comment period for the FS and Proposed Plan will extend for 30 days, from February 28, 2011 to 11:59 pm MDST (Mountain Daylight Savings Time) on March 29, 2011. DEQ will accept verbal comments following its public meeting on March 9, 2011, at 6:30 pm at the Gallatin County Commission Meeting Room, 311 W. Main Street, Bozeman, Montana. Comments received through the U.S. Postal Service must be postmarked no later than March 29, 2011, and comments submitted electronically must be received no later than 11:59 pm MDST on March 29, 2011. During this time, the public can submit written comments to:

Kate Fry
DEQ-Remediation Division
P.O. Box 200901
Helena, MT 59620-0001
kfry@mt.gov

Verbal comments will not be accepted over the phone; however, you may call Kate Fry for additional information at 406-841-5066 or 1-800-246-8198.

A responsiveness summary, which is a written response to all public comments received on the FS and Proposed Plan during the public comment period will be included in the ROD.

Montana Department of
Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

ADDRESS CORRECTION REQUESTED